UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

PROVEN NETWORKS, LLC., SONICWALL INC. Plaintiff, v. AMAZON.COM, INC., AMAZON WEB SERVICES, INC., DELL TECHNOLOGIES, INC., DELL, INC., EMC CORPORATION, ARISTA NETWORKS, INC., SOLARWINDS CORP., NETAPP, INC., ARUBA NETWORKS, INC., HEWLETT PACKARD ENTERPRISE COMPANY, CISCO SYSTEMS, INC., Defendants, and SONICWALL, INC. Declaratory Judgment Plaintiff.	Case No. WA:20-MC-02959-ADA

Proven Networks, LLC's Opening Claim Construction Brief

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I. INTRODUCTION

Proven Networks, LLC, ("Proven") and Defendants[1] offer not just competing claim construction proposals but completely different approaches to claim construction. Proven's proposals preserve the plain meaning of the disputed claim terms and are faithful to the full scope of the intrinsic record as well as recognize the knowledge of a person of skill in the art.

Defendants' proposals, on the other hand, violate various canons of black letter claim construction law. They alternatively impose limitations not within the claims, ask this Court to recharacterize and burden clear terms by importing extraneous additional limitations that are unsupported by intrinsic evidence and confusion, or outright seek to invalidate nearly two dozen claims despite specification language that contradicts their position. Such litigation-driven proposals are improper under controlling law and would do nothing to help the factfinder. Defendants' proposed constructions should be rejected.

II. BACKGROUND OF THE PATENTED TECHNOLOGIES

There are three patents[2] with disputed terms at issue in this claim construction proceeding: U.S. Patent Nos. 8,165,024 (the "'024 Patent"; Ex. 1), 7,450,507 (the "'507 Patent"; Ex. 2), and 8,018,852 (the "'852 Patent"; Ex. 3). The '024 patent is at issue in all cases but Amazon and NetApp; the '507 patent is at issue in only the cases against Dell and NetApp; and the '852 patent is at issue in all the cases except against Cisco and Solarwinds.

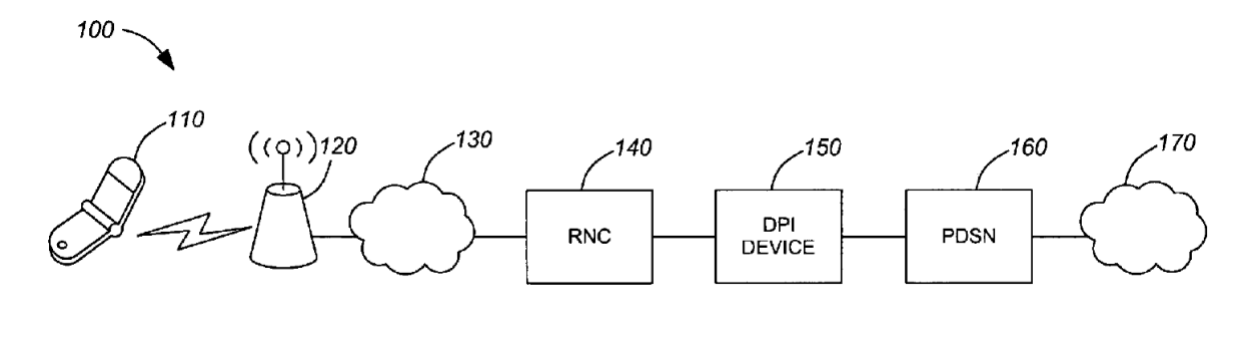
A. The '024 patent

The '024 patent was filed on April 3, 2008, and was invented by Andrew Dolganow, Keith

[1] Defendants are Amazon.com, Inc, Amazon Web Services, Inc., Dell Technologies, Inc., Dell, Inc., EMC Corp., Arista Networks, Inc., Solarwinds Corp, Netapp, Inc., Aruba Networks, Inc., Hewlett Packard Enterprise Company, Cisco Systems, Inc. and as Declaratory Judgment Plaintiff and Counter-claim defendant, Sonicwall, Inc. Proven understand Aruba Networks, Inc. has converted to an LLC and will work with Proven to substitute the correct party.

[2] There is one additional patent at issue in these cases, without any disputed terms for construction: U.S. Pat. No. 8,812,454.

Allan, and Colin Leon Kahn, originally at Alcatel Lucent Corporation, a leader in communications and networking research, development, and manufacturing. The ’024 patent teaches a method and device for performing deep packet inspection at a point in a network to identify application characteristics associated with active flows and for including classification information in packets that may be used in processing at other points in a network. Figure 1 of the ‘024 patent describes an exemplary placement of an embodiment within a mobile telecommunications network:



‘024 patent; Figure 1 (identifying 150 as the DPI device, sitting between a radio network controller 140 and a packet data serving node 160); *see* ‘024 patent, 4:1-6. As traffic passes between the end user device 110 and the network 170, the “deep packet inspection device . . . intercepts, ‘sniffs’ or otherwise receives packets transmitted from user node 110 to a destination in network 170.” *See* ‘024 patent, 4:56-65. In doing so, the DPI device is able to “examine[] any combination of information in layers 2 through 7 of the Open Systems Interconnection Model” and performs that ‘“deep’ analysis of one or more packets in order to identify an application associated with the packets.” *See id.* 5:22-27.

The OSI model refers to a standardized model that describes well-known layers of communication between devices that break up the task of data delivery into sub-tasks. Goossen

Decl. ¶ 23. The OSI model has seven layers:

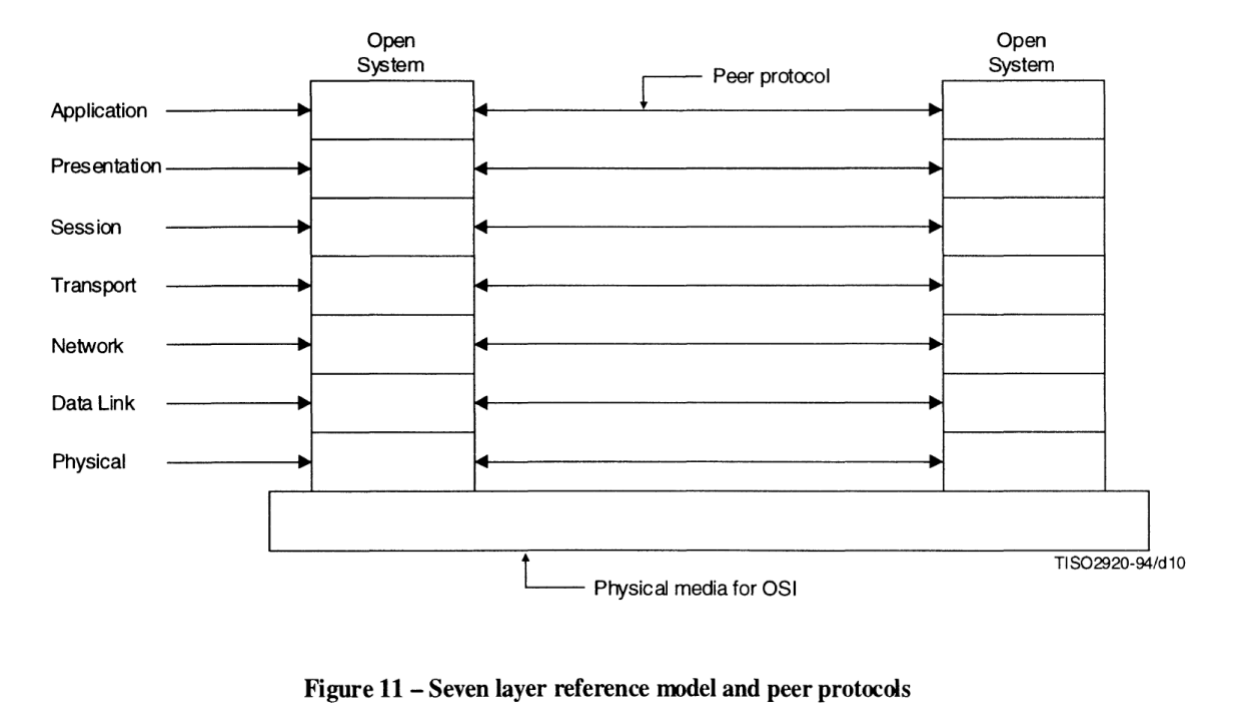


Figure 11 – Seven layer reference model and peer protocols

Goossen Decl. ¶ 23; Ex. 4, ISO/IEC 7498-1:1994(E) "Information technology - Open Systems Interconnection - Basic Reference Model: The Basic Model" at 28. As seen in the figure, each layer may have one or more "peer protocol" associated with it. *See id.* In general, protocols are sets of rules that define between the two systems how functions will be performed and communicated. Goossen Decl. ¶ 24. For each layer, the data from the lower layer is said to be encapsulated within the higher layer and a header appended to give further instruction and provide information about the encapsulated data or routing instructions. Goossen Decl. ¶ 24.

For example, Figure 2 of the '024 patent identifies a layer 3 packet and shows one or more fields that could be used to store application information:

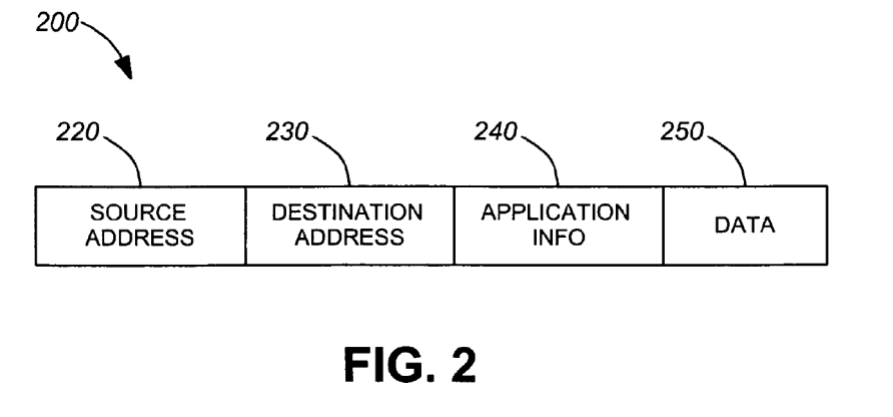


FIG. 2

'024 patent, Figure 2; 6:22-27. Shown here is an example of encapsulation, where application data 250 has several fields appended to it, such as "source address," "destination address," and "application info." *See id.* Goossen Decl. ¶ 25. The '024 patent describes another type of encapsulation, referring to IP tunneling, with reference to Figure 3:

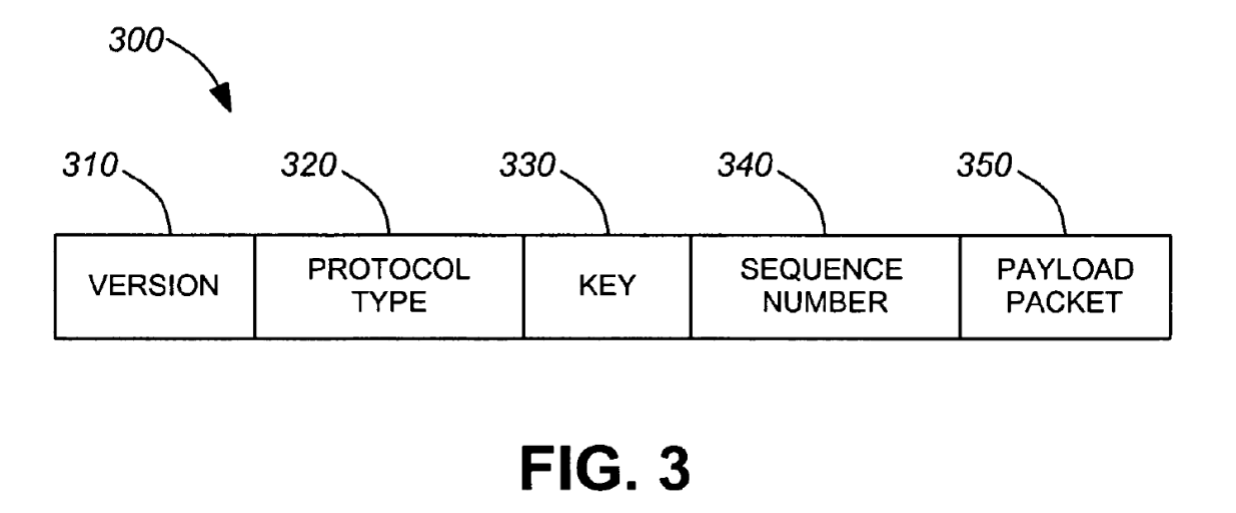


FIG. 3

'024 patent, Figure 3. For example, this "generic routing encapsulation packet" "encapsulate[s] network layer packets inside of an IP tunneling packet." '024 patent, 6:66-7:6. That is, a packet such as the L3 (or network) packet in Figure 2 could be the payload packet 350 of Figure 3,

with additional fields encapsulating, or wrapping, the payload packet (as shown by 310, 320, 330, and 340. Goossen Decl. ¶¶ 25-26; '024 patent, 6:66-7:43. These concepts are readily understandable to a POSITA and are applicable to the '507 patent and '852 patent as well. Goossen Decl. ¶¶ 23-28.

The DPI device of the '024 patent, therefore is able to example parts of the encapsulated packet, looking to data in one or more of the layers of the OSI model, as implemented in a packet data network, and identify the application that generated the packet as well as append application information into a header field of an encapsulation to allow other networking equipment to be able to determine the application associated with the flow and packet without having to perform its own deep packet inspect. Goossen Decl. ¶ 29; *see, e.g.,* '024 patent, 5:21-53, 8:40-10:34.

B. The '507 patent

Alcatel-Lucent filed the application that resulted in the '507 patent on February 19, 2003. The patent relates to computer networks and, more specifically, methods and systems for improving data traffic to increase end-to-end speed and reduce congestion within the network.

Computer networks are not limitless mediums. They have finite capacities and limits on the maximum rate of data that can be transferred across the network, what is often broadly referred to as bandwidth. And at each of the various layers in a network—of which there may be many depending on the system—there are further bandwidth limits, for instance, in a potential Port, IP subnet, Protocol, or Socket layer. These constraints are a product of the underlying network architecture, allocations that may be made at each layer, and the data being transmitted.

Due to the inherent limits on the amount of available bandwidth in a given network, computer engineers have tried developing strategies to optimize network traffic, whether through

hardware, software or a combination of the two. Among the universe of ways to optimize a computer network, the '507 patent targets the management of traffic streams from network nodes through a hierarchical rate-limiting scheme. Rate-limiting is a process of limiting the amount of traffic that is allowed from a network node. Ex. 2 at 1:19-21. Rate limiting may be applied in a hierarchical scheme, meaning that rate-limits are applied to different layers of a data flow or different classifications or subclassifications of the data in a data stream. *Id.* In the '507 patent, one example is that traffic at the Socket level must not exceed 20 Megabits per second, traffic at the Protocol level must not exceed 100 Megabits per second, "traffic at the IP subnet (IP1) level ... must not exceed 500 Megabits per second and the overall traffic at the port level ... must not exceed 1 Gigabit per second." *Id.*, Fig. 2, 5:13-16. Through the use of rate-limits, network providers can manage the amount of traffic on a layer by layer basis in the computer network to optimize network performance. If a node exceeds a given rate-limit, or traffic at a certain classification becomes oversubscribed, network systems may then de-prioritize the data packet, hold it, or drop it to relieve the amount of traffic. *Id.*, 5:55-63, 10:7-11.

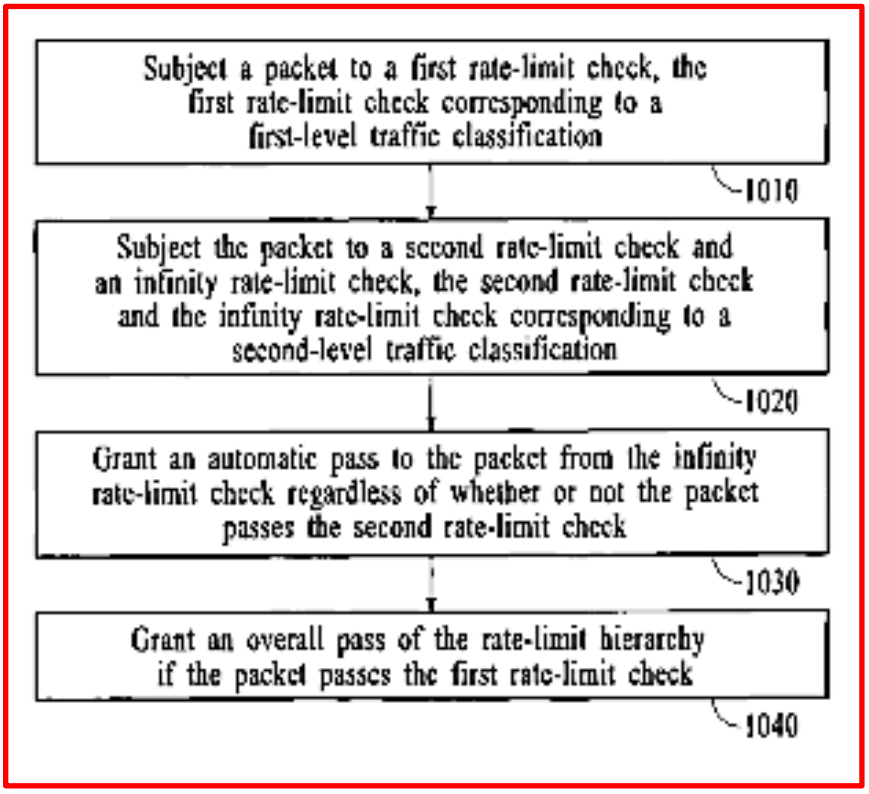
In a hierarchical rate-limiting scheme, the traffic stream must pass each rate-limit associated with its classifications, in which case the traffic is given an "overall" pass to proceed. Hierarchical rate-limiting schemes themselves, however, are prone to inefficiencies. A particular data flow might fail one or more of its rate limits when there might still be network bandwidth allocated to different layers that are available. Network engineers therefore implemented borrowing schemes to allow classifications at various layers to "borrow available bandwidth from the allocated rate limit of their parent classification." *Id.*, 1:50-55. At the time of the invention there were software schemes to enable rate-limiting borrowing schemes, and more problematic hardware implementations of the same. *Id.*, 1:49-2:3. Hardware approaches were considered more

difficult and caused "additional latency for the traffic and/or additional complexity in hardware to [reallocate bandwidth] at the desired speeds." *Id.* at 1:64-2:3

To solve this problem, the inventors of the '507 patent, computer network experts at Alcatel-Lucent, invented a different framework for new hierarchical rate-limiting methods and apparatuses. According to the '507 patent, the patented inventions use multiple "rate-limit checks" corresponding to at least two "levels" of packet traffic classification. For instance, in exemplary Figure 2 and its corresponding textual descriptions in the patent, the inventors taught embodiments with several traffic classification levels; P, Q, R, and S. The "P" level is the highest (i.e. most broad) level in the traffic classification hierarchy and corresponds to the port level, i.e., the physical port level. This is followed by The "Q" level is the second highest level (i.e., narrower than the highest level) in the traffic classification hierarchy and corresponds to the Internet Protocol subnet level, the "R" level, which is also narrower and corresponds to a protocol level, and the "S" level, which is even narrower and corresponds to the "socket" level.

More specifically, the claimed inventions utilized a first rate-limit check corresponding to a first-level packet traffic classification—and a second rate-limit check along with what they called an "infinity rate-limit check," both of which correspond to a second-level traffic classification." Per the inventors, the infinity rate-limit rule extends the life of a packet "so that the ultimate determination of whether or not to grant an overall pass to the packet is made in a higher classification level than the traffic classification level in which the packet did not receive a pass." That is, in exemplary infinity rate-limit rules can "grants an automatic pass to the packet at the child classification level regardless of the outcome of the rate-limit check of the child classification level" and by so doing, it "enables available bandwidth to be borrowed from the parent classification level so that the packet receives an overall pass, regardless of whether the

packet passed the rate-limiting rule of the child classification level." *Id.* at 5:27-39 (emphasis added). The "infinity rate-limit check" ensures that so long as a packet passes the rate-limit associated with its highest associated classification, and there is available bandwidth, the packet will be able to borrow that bandwidth so that it may continue through the network. Contemporaneous hierarchical rate-limiting schemes lacked this "infinity rate-limit check" and lacked the ability to provide an "overall" pass even if a packet failed a lower level rate-limit check. *See* Ex. 5 at 2 (Patent Office's Notice of Allowability). Figure 10 of the patent generally describes one high-level embodiment of this concept:



C. The '852 patent

The '852 patent was filed on December 24, 2003, claiming benefit of Provisional application No. 60/497,074, filed on August 22, 2003, and was invented by Joseph Olakangil, Sahil Dighe, and Kishore Rao. The '852 patent describes "a port selection technique used in a

network switching environment where there are multiple equal-cost paths between two nodes." '852 patent, 1:15–17.

The '852 patent explains that some pre-existing routers employ a shortest path routing protocol generate a "routing table" that identifies a "next-hop" to reach a number of "destinations." *Id.*, 1:34–47. "If the destination node is reachable through a plurality of interfaces, a router will generally transmit the packet toward the destination node using the interface associated with the minimal cost path." *Id.I,* 1:57–60. Where "multiple paths . . . have the same minimal path cost," "each of the associated interfaces [at the router] may be used to transmit a packet to the destination with minimal cost." *Id.* at 1:60–65. Typically, the router uses, for example, "a round-robin scheme to assign each new outbound flow to one of the plurality of minimal equal-cost paths." Id., 1:61–67.

The '852 patent proposes an alternative to the "round-robin scheme" for assigning an outbound flow to an interface at the router that takes into account "source learning," in which "the network addresses of inbound flows are associated with the port on which they are received." *Id.*, 2:29–32. In particular, the router assigns the outbound flow to the port on which an inbound flow is received instead of merely using the round-robin scheme. *Id.* at 2:18–26.

One embodiment of the invention of the '852 Patent is explained with reference to Figure 1:

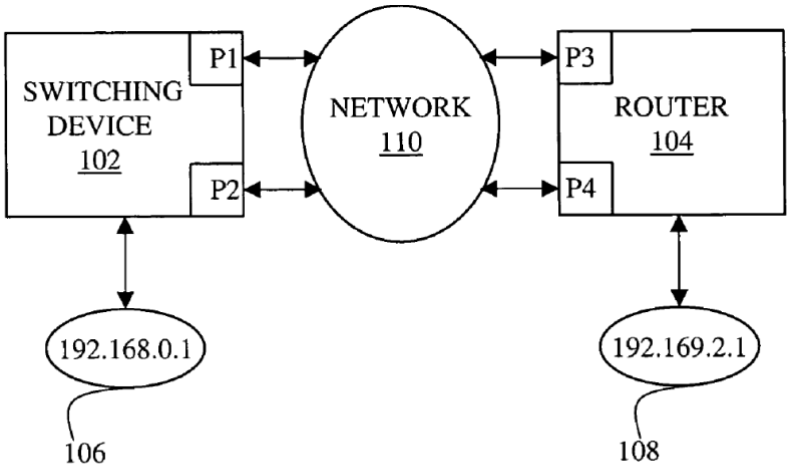


FIG. 1

As shown in Figure 1, a "distributed network" includes each of a first node and a second node. '852 patent, 2:61–64, 6:29–37. The second node has a network address, shown as IP address 192.169.2.1.

The first node "identif[ies] a plurality of ports associated with minimal equal-cost paths from the first node to the second node." '852 patent at 6:35–37. For example, it includes "a plurality of interfaces including port P1 and port P2." *Id.*, 2:66–3:2. The paths to the second node from port P1 and port P2 are "minimal equal cost paths," meaning the first node "has the option of assigning the first port P1 or second port P2 to be the designated outbound port for purposes of transmitting traffic" to the second node. *Id.*, 3:11–16.

The first node and the second node exchange data back and forth, having an outbound flow from the first node to the second node and an inbound flow from the second node to the first node. '852 patent, 3:36–40, 6:29–42. When the first node receives an inbound flow from the second node on the first port P1, the router "associat[es the] network address of the inbound flow with the first port on which it was received." *Id.*, 6:38–42. The first node then "transmit[s] the outbound flow from the first port of the first node to the second node based on the network address

associated with the inbound flow." '852 patent, 6:43–45.

III. CLAIM CONSTRUCTION PRINCIPLES

The "claim construction inquiry . . . begins and ends in all cases with the actual words of the claim." *Teleflex, Inc. v. Ficosa N. Am. Corp*., 299 F.3d 1313, 1324 (Fed. Cir. 2002). Indeed, "the claims themselves provide substantial guidance as to the meaning of [] terms." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005).

Thus, when conducting a claim construction inquiry, "district courts are not (and should not be) required to construe every limitation present in a patent's asserted claims." *O2 Micro Int'l v. Beyond Innovation Tech*., 521 F.3d 1351, 1362 (Fed. Cir. 2008). This is because claim construction is "not an obligatory exercise in redundancy." *US Surgical Corp. v. Ethicon, Inc*., 103 F.3d 1554, 1568 (Fed. Cir. 1997).

There is a "heavy presumption" that claim terms carry their "full ordinary and customary meaning, unless [the accused infringer] can show the patentee expressly relinquished claim scope." *Epistar Corp. v. ITC*, 566 F.3d 1321, 1334 (Fed. Cir. 2009). Because that plain meaning "is the meaning that the term would have to a [POSITA] in question at the time of the invention," construing claims often "involves little more than the application of the widely accepted meaning of commonly understood words." *Phillips*, 415 F.3d at 1313-14. Thus, where a term is used in accordance with its plain meaning, the court should not replace it with different language. *Thorner v. Sony Comp. Ent. Am. LLC*, 669 F.3d 1362, 1366-67 (Fed. Cir. 2012) ("We do not read limitations from the specification into claims; we do not redefine words. Only the patentee can do that."); *ActiveVideo Networks, Inc. v. Verizon Commc'ns, Inc.,* 694 F.3d 1312, 1326 (Fed. Cir. 2012) ("The district court did not err in concluding that these terms have plain meanings that do not require additional construction. … [T]he district court properly rejected [the proposed] construction and resolved the dispute between the parties.").

"There are only two exceptions" in which claim terms are not given their full ordinary and customary meaning: "1) when a patentee sets out a definition and acts as his own lexicographer,

or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution." *Thorner*, 669 F.3d at 1365. Without clear and unambiguous disclaimer or lexicography, courts "do not import limitations into claims from examples or embodiments appearing only in a patent's written description, even when a specification describes very specific embodiments of the invention or even describes only a single embodiment." *See JVW Enters., Inc. v. Interact Accessories,* 424 F.3d 1324 (Fed. Cir. 2005). Similarly, a statement during patent prosecution does not limit the claims unless the statement is a "clear and unambiguous disavowal of claim scope." *Omega Eng'g, Inc v. Raytek Corp.,* 334 F.3d 1314, 1325 (Fed. Cir. 2003).

IV. DISPUTED TERM IN THE '024 PATENT

A. Claims 1 and 16 Limitations Are Not Ordered

Proven's Proposed Construction	Defendants' Proposed Construction
No construction necessary.	Steps of the claim must occur in the order recited

Defendants seek to impose an unwritten additional requirement that the limitations of claims 1 (a method claim) and 16 (a system claim) must be performed in the order in which they are recited in the claim. This attempt to re-write the claims is unsupported by the intrinsic record and contrary to Federal Circuit precedent.

The Federal Circuit has made clear that "[u]nless the steps of a method ***actually recite an order***, the steps are not ordinarily construed to require one." *Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1369 (Fed. Cir. 2003) (emphasis added) (quoting *Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1342-43 (Fed. Cir. 2001)). Here, there can be no disagreement that the claims do not actually recite an order (*e.g.* by using words such as "first," "next," or "after). *See generally* '024 patent, Claim 1, 16. As a result, ordinarily there would be no reason to construe this claim to require an order as the Defendants request.

In rarer instances, if the limitations of a claim "implicitly require that they be performed in the order written," then a construction that they be performed in that order may be proper.

"*Interactive Gift* recites a two-part test for determining if the steps of a method claim that do not otherwise recite an order, must nonetheless be performed in the order in which they are written." *Altiris*, 318 F.3d at 1369. "First, we look to the claim language to determine if, as a matter of logic or grammar, they must be performed in the order written." *Id.* If not, the inquiry turns to whether the specification "directly or implicitly requires such a narrow construction." *Id.* at 1370. Defendants will not be able to show either step supports their attempt to place this additional requirement on the claims.

There is no logical or grammatical basis in the claims that require each limitation to be performed in the order stated. Courts have found this implicit basis to exist where, as this Court has noted, "some of the actions in the claimed steps refer to the completed results of actions in a prior step." *See Ancora Techs. v. LG Elecs. Inc.*, Civil No. 1-20-CV-00034-ADA2020 WL 4825716, at *5 (W.D. Tex. Aug. 19, 2020) (construing a partial ordering requirement where a limitation b required "using an agent to set up a verification structure" and the following limitation required "verifying the program using at least the verification structure"). That situation is not present here.

For example, the "performing deep packet inspection (DPI) to identify an application associated with the active flow by analyzing at least one other packet" limitation shows that, grammatically and logically, the limitations may be performed in various orders. While the first written limitation requires "receiving a packet from the source node to the destination node," the "performing deep packet inspection" limitation requiring performing deep packet inspection by analyzing a ***different*** packet than the packet received.[3] *See* '024 patent, Claim 1. Logically and grammatically, that packet could have been received prior to the packet that is received in the first limitation (just as it is technologically possible as well, discussed below). It could also occur after the last-written "forwarding" limitation of Claim 1, or in between any other two limitations written. Because this limitation relates to analyzing a packet other than the received packet, both

[3] The parties have agreed that the term "analyzing at least one other packet" means "analyzing at least one packet other than the packet."

grammatically and logically, it can occur at any time any other limitations are occurring. This alone precludes finding that the limitations are written in order. And there are no other grammatical or logical signposts to indicate that one limitation must occur immediately before or after the next.

Nor does the specification directly or implicitly requires such a narrow construction. *Altiris,* 318 F.3d at 1370. To the contrary, the specification also makes clear that the "performing deep packet inspection (DPI) to identify an application associated with the active flow by analyzing at least one other packet" could occur without regarding to analysis of the received packet because "in various exemplary embodiments, DPI device 150 examines any combination of information in OSI layers 3 through 7 of ***one or more packets*** to identify an application associated with a flow." *See* '024 patent, 8:46-56 (emphasis added); Goossen Decl. ¶¶ 43-44. More generally, the limitations deal with different associations, which may occur simultaneous and/or independently. For example, the "associating the packet" limitation relates to associating a *packet* to an *active flow*. Goossen Decl. ¶¶ 45-48. On the other hand, the "performing deep packet inspection" limitation relates to associating an *application* with an *active flow*. Goossen Decl. ¶¶ 45-47, 49, 51. These two associations are independent. *See* '042 patent, Claim 1; Goossen Decl. ¶¶ 45-51. Thus, contrary to the requirement under *Interactive Gift* that the specification directly or implicitly require a narrow, ordered construction, the specification of the '042 patent discloses un-ordered performance of the limitation.

V. DISPUTED TERMS IN THE '507 PATENT

A. "infinity rate check limit"

Proven's Proposed Construction	Defendants' Proposed Construction
No construction necessary; plain and ordinary, which to a POSITA means "	a rule that grants an automatic pass to a packet at a child classification level regardless of the outcome of the rate limit check at that child classification level

The "claim construction inquiry . . . begins and ends in all cases with the actual words of the claim." *Teleflex, Inc. v. Ficosa N. Am. Corp*., 299 F.3d 1313, 1324 (Fed. Cir. 2002). Indeed,

"the claims themselves provide substantial guidance as to the meaning of [] terms." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005).

This is a textbook example of one in which the claim itself sufficiently describes the scope of the term in dispute. The claims do not just utilize the disputed four-word phrase without any further description of it. To the contrary, each claim expressly states that the infinity rate- check limit or rule corresponds to a "second-level traffic classification." ^*See, e.g.* Claim 1. Indeed, the claims themselves also further define the term to make clear it functions to "grant[] an automatic pass to said packet in said second-level traffic classification" and does so "regardless of whether or not said packet passes said second rate-limit rule." *Id.*

Despite all this, Defendants seek to replace the disputed four-word phrase with ***twenty nine*** other words. But that poses several problems—and each introduces a separate risk for reversible legal error.

As an initial matter, a POSITA does not need any further re-defining beyond the significant definitions and descriptions the claims already provide. Nor is one proper under the law. *Thorner v. Sony Comp. Ent. Am. LLC*, 669 F.3d 1362, 1366-67 (Fed. Cir. 2012) ("We do not read limitations from the specification into claims; we do not redefine words. Only the patentee can do that.").

Additionally, instead of removing any ambiguity, Defendants' construction introduces ambiguity and unnecessary complexity. Replacing the claim term in dispute with Defendants' construction—as is often the exact replacement the parties are required to do before the jury—confirms this, as seen in the bracketed version of the claims below:

> subjecting said packet to a second rate-limit check and an [*a rule that grants an automatic pass to a packet at a child classification level regardless of the outcome of the rate limit check at that child classification level*], said second rate-limit check and said [*a rule that grants an automatic pass to a packet at a child classification level regardless of the outcome of the rate limit check at that child classification level*] corresponding to a second-level traffic classification;
>
> granting an automatic pass to said packet from said [*rule that grants an automatic pass to a packet at a child classification level regardless of the outcome of the*

rate limit check at that child classification level] regardless of whether or not said packet passes said second rate-limit check;

And notably, beyond just the head-scratching complexity it introduces, Defendants' construction also introduces some apparent tension with the claim language itself. For example, in portions of the claim that are not in any apparent dispute, the claim uses the phrase "second-level" traffic classification. But where the specifically disputed claim term is used, Defendants' construction appears to introduce a "child classification level" instead. That is improper. Defendants would have no support for replacing the actually claimed "second-level traffic classification" with "child classification level" throughout the claims. To the contrary, those narrower limitations are in later dependent claims, such as Claims 7 and 9. *See* Goossen Decl. ¶¶ 55-57. And without clear and unambiguous disclaimer or lexicography—which Defendants do not have here—courts "do not import limitations into claims from examples or embodiments appearing only in a patent's written description, even when a specification describes very specific embodiments of the invention or even describes only a single embodiment." *See JVW Enters.*, 424 F.3d at 1324. Moreover, replacing "second-level traffic classification" in some instances, but not others, would leave the jury also asking whether the two mean the same thing, or not. Defendants construction fails for all these reasons and it should be rejected.

VI. DISPUTED TERMS IN THE '852 PATENT

A. "minimal equal-cost paths"

Proven's Proposed Construction	Defendants' Proposed Construction
No construction necessary; not indefinite	Indefinite.

Defendants assert that the term "minimal equal-cost paths" is so invalid as to invalidate the thirteen claims in which it appears. While Proven has not yet received a full explanation of Defendants' indefiniteness challenge for which they bear the burden of proving by clear and convincing evidence, their invalidity contentions disclosed that they believe "the word 'minimal' is highly subjective and, on its face, provides little guidance to one of skill in the art" and that "[n]otably, it is not a question of *what* must be minimal, but rather *how much* is minimal." Ex. 6,

Excerpt of Defendants' Invalidity Contentions at 115-16. Further, in their Disclosure of Extrinsic Evidence, Defendants indicate that their expert may explain that "the intrinsic record contains no clear criteria or basis of comparison for a person of ordinary skill in the art to determine the objective boundary of 'minimal' (e.g. *how much* is minimal)." Ex. 7, Excerpt of Defendants' Disclosure of Extrinsic Evidence at Exhibit A, page 1. Defendants are wrong. The term "minimal equal-cost paths" is not a term of degree, which Defendants attempt to shoehorn the term into. Instead, a POSITA when reading the intrinsic record would understand the term refers to the path or paths of least or minimal costs as compared to other paths of unequal costs. That is, the "minimal equal-cost paths" term refers to the least costly path or paths of the available paths. It is not a term of degree.

"[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention." *Nautilus, Inc. v. Biosig Instruments, Inc*., 572 U.S. 898, 901 (2014). "A patent is presumed valid under 35 U.S.C. § 282" and any defense of indefiniteness has to be proven "by clear and convincing evidence." *Biosig Instruments, Inc. v. Nautilus, Inc*., 783 F.3d 1374, 1377 (Fed. Cir. 2015). This burden falls on the accused infringer. *See Tech. Licensing Corp. v. Videotek, Inc*., 545 F.3d 1316, 1327 (Fed. Cir. 2008). Defendants cannot meet this heavy burden.

The term is not indefinite and needs no construction. The use of the term 'cost path' within the claim term anchors the entire term to a plain and ordinary meaning readily understandable to a POSITA. Indeed, the specification itself states that the "cost of a path between the source and destination nodes is then the sum of the costs associated for all the interfaces traversed between the source and destination nodes. If the destination node is reachable through a plurality of

interfaces, a router will generally transmit the packet toward the destination node using the interface associated with the minimal cost path." '852 patent, 1:48-61. That is, the router will consider the cost of each path between the source and destination node and pick the path with the minimal cost; that is, the least expensive path among the plurality of paths available. *See id.*; Goossen Decl. ¶ 62. The specification also notes that "[i]n some cases, however, multiple paths may have the same minimal path cost;" *i.e.* minimal equal-cost paths. *See* '852 patent, 1:60-61; Goossen Decl. ¶ 62.

The Court need not take Proven's word for it. Instead, Defendant NetApp previously filed in *inter partes* review on the '852 patent and submitted a declaration from its own expert, Dr. Kevin Jeffay.[4] Instead of finding difficulty in understanding the scope of the term, NetApp's expert was able to succinctly summarize it:

> Because a destination node may be reachable from a number of different interfaces on the router (*e.g.* because there are multiple paths through the network from the router to the destination node), the next-hop entries in the table represent the next "leg" of the least-cost path towards a particular destination. Cost is an arbitrary measure but is commonly thought of as a measure of the 'distance' between a router and the destinations in the routing table. Typically, routers have multiple interfaces through which a destination can be reached. This means there exists multiple paths to the destination. In such cases, it can be the case that some subset of these multiple paths have the same cost and, in particular, that the cost of these equal-cost paths is the minimum cost among all paths to the destination.

Ex. 8, Excerpt of NetApp Exhibit 1003 (Jeffay Decl.) at ¶¶ 39-40, *NetApp, Inc. v. Proven Networks, LLC*, IPR2020-01437. This extrinsic evidence underscores the intrinsic record informs with reasonable certainty, those skilled in the art about the scope of the invention. This is also consistent with Proven's expert, Dr. Goossen, who also agrees that the intrinsic record makes

[4] NetApp and Proven have since resolved the dispute between them regarding the '852 patent, and the IPR was terminated before the Proven filed its preliminary patent owner response and before an institution decision.

clear to a POSITA that the *minimal* equal-cost paths are those paths are the paths with the least costs among all paths available. Goossen Decl. ¶ 61-64.

In sum, the intrinsic record is clear that a POSITA would understand the scope of the claim with respect to "minimal equal-cost paths" (indeed, the specification all but defines it), and that two experts in the field (one adverse to Proven) agree as to how a POSITA would understand the scope of the term. Defendants position is unsupported and falls far below the clear and convincing standard required to invalidate' essentially every claim of the '852 patent.

B. "switching device"

Proven's Proposed Construction	Defendants' Proposed Construction
No construction necessary.	"a device that performs layer 2 and layer 3 operations using information from layers 2 to 7 of the OSI (Open Systems Interconnect) reference model"

For this next dispute, Defendants again ignore the well-settled principle that the "claim construction inquiry . . . begins and ends in all cases with the actual words of the claim." *Teleflex, Inc. v. Ficosa N. Am. Corp*., 299 F.3d 1313, 1324 (Fed. Cir. 2002). Indeed, "the claims themselves provide substantial guidance as to the meaning of [] terms." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005).

This term is readily understood to a person of ordinary skill in the art in view of the claim itself, let alone other intrinsic evidence. Indeed, the claim itself defines the specific functionality of the novel claimed "switching device:"

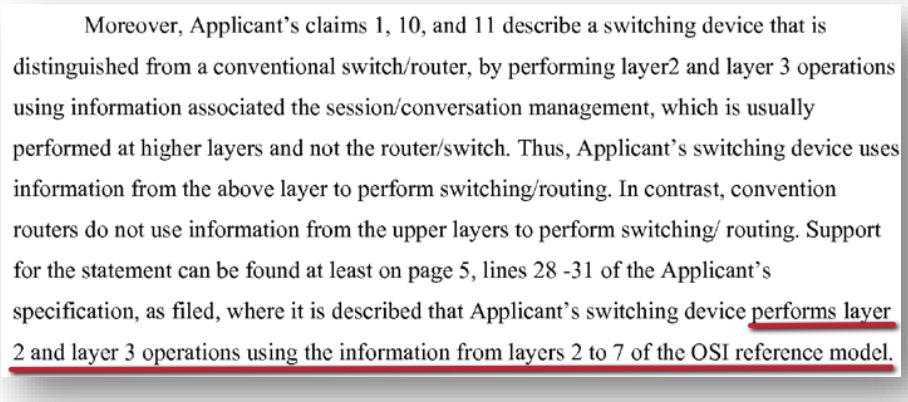
> 10. A[n] *equal-cost source-resolved (ECSR) switching device* for transmitting an outbound flow, for a conversation, to a second node, *wherein the switching device*:
>
> *identifies* a plurality of ports associated with a minimal equal-cost path from the switching device to the second node;
>
> if an inbound flow, for the conversation, from the second node is not detected on the plurality of ports of the first node, then the switching device *transmits* the

> outbound flow, for the conversation, from a port selected from the plurality of ports associated with the minimal equal-cost path;
>
> *monitors* for an inbound flow, for the conversation, from the second node on the plurality of ports associated with the minimal equal-cost path;
>
> if the inbound flow, for the conversation, received from the second node is detected on a first port of the plurality of ports of the first switching device, then *associating* a network address of the inbound flow with the first port on which it was received; and
>
> *transmit* the outbound flow from the first port of the switching device to the second node based on the network address associated with the inbound flow.

Thus, to a POSITA with the patent in hand, it really needs no further construction. *See* Goossen Decl. ¶ 66.

For their part, Defendants do not dispute that a POSITA in computer networking would not generally recognize the term "switching device." Nor could they. Indeed, as the intrinsic (and extrinsic) record make clear, different types of "switching devices" have been used to route and switch traffic in computer networks over the past three or more decades. Nor could Defendants reasonably dispute that the claims themselves define the functionality of the '852 patent's switching device. If they did, even a cursory glance at the claims (such as the one inserted above) would prove them wrong.

Instead, Defendants' propose an overly narrow and otherwise confusing proposed construction based on an apparent misreading of the intrinsic record. Citing to the prosecution history, Defendants identified the basis for their construction based a particular sentence in the Applicant's response to an office action (underlined in red below):



Moreover, Applicant's claims 1, 10, and 11 describe a switching device that is distinguished from a conventional switch/router, by performing layer2 and layer 3 operations using information associated the session/conversation management, which is usually performed at higher layers and not the router/switch. Thus, Applicant's switching device uses information from the above layer to perform switching/routing. In contrast, convention routers do not use information from the upper layers to perform switching/ routing. Support for the statement can be found at least on page 5, lines 28 -31 of the Applicant's specification, as filed, where it is described that Applicant's switching device performs layer 2 and layer 3 operations using the information from layers 2 to 7 of the OSI reference model.

Ex. 9, Sept. 30, 2009 Response to Office Action at 8. First, the statement referenced by Defendants identifies the disclosure in the specification that ***supports*** the added switching device limitation; it does not ***define*** the switching device. Indeed, even the specification (as included in the application and cited by Applicant) uses different language: "The routing engine 230 of the preferred embodiment is ***generally capable of, but not limited to***, performing layer 2 switching operations and layer 3 routing operations using layer 2 through 7 information, as defined in the Open Systems Interconnect (OSI) reference model." Ex. 10, Dec. 24, 2003 Original Specification at 5, lines 28-31 (emphasis added); *see also* '852 patent, 3:52-56 (same language).

By misinterpreting the prosecution history statement, Defendants offer a proposed construction that—aside from unnecessary—is confusing and vague. *See* Goossen Decl. ¶¶ 66-67. For example, Defendants exclude the language cited in the specification itself that states that the switching device is "generally capable of, but not limited to" the switching and routing operations. *See* '852 patent, 3:52-56. By excluding this language, Defendants construction could be read to impose a requirement, not in the claims, that the switching device ***only*** perform such switching and routing operations. *See* Goossen Decl. ¶ 67. A POSITA reading the claims and intrinsic record would not interpret the "switching device" to be limited in the manner Defendants' proposal could be interpreted. *See* Goossen Decl. ¶¶ 66-67.

Nor would a POSITA interpret the "switching device" of the '852 patent to use information from ***each and every*** layer 2-7 of the OSI reference model. *See* Goossen Decl. ¶¶ 69-71. Though their proposed construction is ambiguous and unclear, Defendants' construction could be interpreted to require switching and routing decisions to be made using information from each of the 2-7 layers. This construction, however, would be inconsistent with the claims and other intrinsic record and violate numerous canons of claim construction.

The specification itself rules out requiring information from ***each*** layer. As discussed above in the technology background, each layer of the standardized "stack" may have one or more protocols associated with it. *See* Goossen Decl. ¶¶ 69-72. Each protocol may have information associated with the underlying data, or payload, that provided information necessary for interpretation or handling. *See* Goossen Decl. ¶¶ 70. As each layer is stacked on the next, the underlying data unit is "encapsulated" within the lower layer—that is, a header is wrapped around the higher layer's data. *See* Goossen Decl. ¶ 70. If Defendants' construction were to require using information from *each* layer, that means the switching device would have to use information from ***each*** header for ***every*** level. But the specification teaches the contrary: "The parsing engine 232 decapsulates the incoming PDUs of the ingress data stream [and] extracts one or more bits ***from one or more header(s)*** . . . ." '852 patent, 3:56-63. Thus, the specification makes clear that the switching device need not obtain information from each of the 2-7 layers, but from one or more. *See* Goossen Decl. ¶¶ 69-71.

Further, the '852 patent repeatedly identifies IP addresses as the "source and destination address information" that is output by the routing engine and "used to make forwarding decisions and identify traffic flows." *See, e.g.*, '852 patent, 3:58-63 (quoted language); 4:1-5 ("The source IP address, and the source MAC address in some embodiments, is used . . . to update and refresh the address table . . . ."); 4:11-15 ("[T]he IP destination address is used as a key into a routing table in the forwarding database . . . ."). The claims, too, show the use of "a source IP address retrieved from one or more inbound protocol data units . . . (PDUs) . . . ." '852 patent, Claim 9.

IP stands for "internet protocol" and is a protocol at the "network" or layer 3 of the OSI model. *See* Goossen Decl. ¶ 72. But information exchanged with the internet protocol often uses an abbreviated version of the OSI model, often called the "Internet Stack." *See* Goossen Decl. ¶¶ 23-28, 72. This stack recognizes that the session and presentation layers of the OSI model are not used; instead, a POSITA knows that the IP communication protocol uses the link, internet, transport, and application layers of the OSI model. *See* Goossen Decl. ¶ 72. This would be layers 2, 3, 4, and 7 of the standard model. Even assuming, then, that the switching device as disclosed in the claim required using information from every header in the PDU, that still would not include header information for layers 5 and 6, because the disclosed IP protocol communication does not use those layers. *See* Goossen Decl. ¶ 72. If Defendants' proposed construction were interpreted to require each of the layers 2-7, that construction would exclude a claimed and preferred embodiment that uses IP. *See Vitronics Corporation v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996) (claim construction that excludes a preferred embodiment "is rarely, if ever, correct").

Further, the same paragraph that Defendants cite to support their construction actually shows that the switching device "uses information associated with the session/conversation management, ***which is usually performed at a higher layers [sic] and not at the router/switch***. Thus, Applicant's switching device ***uses information from the above layer*** to perform switching/routing." Ex. 9, Sept. 30, 2009 Response to Office Action at 8. This intrinsic record further underscores that, to the extent Defendants' proposed construction is intended to require information from each layer, that construction would be inconsistent with the intrinsic record.

At best, Defendants' construction is confusing and ambiguous, making construing the term less helpful to a jury, not more. At worst, Defendants' constructions violate canons of claim construction. Either way, construing a "switching device" as suggested by Defendants walks down the wrong path. Instead, Proven asks the Court to leave the term in its unambiguous and clear state, and give it its plain and ordinary meaning in light of the intrinsic record.

C. "if an inbound flow . . . ; and transmitting . . ." / "if the inbound flow . . . ; and transmit . . ." / "determining . . . ; associating . . . ; selecting . . . ; transmitting . ."

Proven's Proposed Construction	Defendants' Proposed Construction
No construction necessary.	The performance of the steps is not performed using any one or more of the following: "hash tables, LAG operations, header packets."

"[D]istrict courts are not (and should not be) required to construe every limitation present in a patent's asserted claims." *O2 Micro Int'l*, 521 F.3d at 1362. Instead, where a term is used in accordance with its plain meaning, the court should not replace it with different language. *Thorner*, 669 F.3d at 1366-67 ("We do not read limitations from the specification into claims; we do not redefine words. Only the patentee can do that."). And because that plain meaning "is the meaning that the term would have to a [POSITA] in question at the time of the invention," construing claims often "involves little more than the application of the widely accepted meaning of commonly understood words." *Phillips*, 415 F.3d at 1313-14.

Defendants will have to acknowledge that each term in the large swath of claim language they place in "dispute" has a plain meaning to a POSITA. Despite this, Defendants nevertheless seek to inject a lengthy and awkward instruction that redefines the claim. Specifically, Defendants seek to multiple separate negative limitations into these claims—that performance of the limitations at issue does not use *one or more* of (1) hash tables, (2) LAG Operations; or (3) header packets. But any negative limitation must be supported by clear intrinsic-record disclaimer and an express discussion of the reason for the exclusion. *Inphi Corp. v. Netlist, Inc.*, 805 F.3d 1350, 1355 (Fed. Cir. 2015) (the specification must "describe[] a reason to exclude the relevant limitation"); *Santarus, Inc. v. Par Pharm., Inc.*, 694 F.3d 1344, 1351 (Fed. Cir. 2012) ("[n]egative claim limitations are adequately supported when the specification describes a reason to exclude the relevant limitation"). See MPEP §2173.05(i) ("Any negative limitation or exclusionary proviso must have basis in the original disclosure . . . [t]he mere absence of a positive recitation is not a bases for an exclusion."). But no such support exists.

In the parties' claim construction exchanges, Defendants have cited the following portion of the prosecution history in support of their negative limitation:

> Applicants second claim element (claim 11) states "determining whether an inbound flow from the second node is present on a first port of the plurality of ports." This concept is not present in the above-mention quote from Manur. In fact, Manur uses hash tables, LAG operations, header packets, etc. This is not Applicant's application, which simply states that if "upon receipt of the first PDU of a flow, the switching device detects the new flow and identifies the two equal costs paths associated with P1 and P2. If, for example, traffic from the second edge to the first edge was previously detected by and learned on port P2, then the learned path test is answered in the affirmative and the switching device assigns P2 as the outbound port for the new flow." It is that simple. This element alone is enough to patentably distinguish the claimed invention under 37 CFR 1.111(b). As such, Applicant respectfully believes that claims 1, 10 and 11 are allowable without regard to Kanetake, and all claims depending therefrom are allowable as well.

Ex. 11, April 29, 2009 Applicant Remarks Made in an Amendment at 9. But the patentee's statements here do not amount to any disclaimer that leads to Defendants' proposed instruction that "the performance of the steps is not performed using any one or more of the following: 'hash tables, LAG operations, header packets.'"

Instead, the patentee clearly is explaining that Manur's use of "hash tables, LAG operations, header packets" do not, by itself, teach or suggest or result in a switching device that specifically "determin[es] whether an inbound flow from the second node is present on a first port of the plurality of ports." In other words, that specific claimed determining functionality requires more. This is the only reasonable conclusion for a POSITA reading this part of the intrinsic record to reach. For instance, a "hash table" is merely a *data structure* that can be used to implement an association between certain data to other values in an array or some other format, depending on how it is designed or programmed. Goossen Decl. ¶ 77. And a "LAG operation" is merely a *data operator* that can operate on an element in a time series to produce the previous element, depending on how it is designed or programmed. Goossen Decl. ¶ 78. And a header packet is a *data structure* that can hold information that can be used to perform a number of functions, again depending on the design of a system. Goossen Decl. ¶ 79. They are merely structure or vehicles

that can be used to perform various structures if the system is further designed to do so, like an encoder or processor or any number of other things. Goossen Decl. ¶¶ 77-80. But, without the '852 patent and its teachings in hand, none of these items on their own show "determining whether an inbound flow from the second node is present on a first port of the plurality of ports." Goossen Decl. ¶ 80

Defendants' negative limitations find no support in the '852 Patent specification, either. The specification does not even mention "hash tables" or "LAG Operations." However, "headers" are discussed in the '852 Patent—and that discussion only shows why Defendants' construction is wrong. Far from excluding their use, the '852 Patent specification teaches using them as part of the process of making "forwarding decisions." *See* '852 Patent at 3:57-63 ("The parsing engine 232 decapsulates the incoming PDUs of the ingress data stream, ***extracts one or more bits from one or more header(s)***, and output source and destination address information used to make forwarding decisions and identify traffic flows."). *See also* '852 Patent at 4:61-66 ("Once the proper next-hop address MAC address and outbound interface are determined for the outbound flow, the forwarding processor 238 encapsulates the packet with a data 65 link layer header before transmitting the frame to the queue manager 240.").

Thus, whether looking to the file history or the specification, none of the patentee's statements act as a clear and unambiguous disavowal of using these items in any manner or as part of the overall claimed methods, let alone one that requires Defendants' legally improper negative limitation. *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1325 (Fed. Cir. 2003) ("[W]e have thus consistently rejected prosecution statements too vague or ambiguous to qualify as a disavowal of claim scope."). Defendants' proposed negative limitations should be rejected.

VII. CONCLUSION

Defendants attempt to import limitations into the asserted claims without any legally proper basis for doing so and invalidate an entire patent while ignoring clear intrinsic record that

contradicts their position. Because the claims should be given their full plain and ordinary meaning, the Court should reject Defendants' proposed constructions.

Date: February 19, 2021

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that the counsel of record who are deemed to have consented to electronic service are being served on February 19, 2021 with a copy of this document via the Court's ECF system.

/s/ Reza Mirzaie
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